

**WHAT IS CLAIMED IS:**

1. An apparatus for measuring fuel amount contained in a fuel tank of a vehicle, comprising:

transmission lines provided within said fuel tank;

a measuring unit for measuring an amplitude of a reflective wave or capacitance voltage in said transmission lines that varies in accordance with a depth of said fuel, said transmission lines being supplied with a high-frequency wave.

2. The apparatus of claim 1, wherein said measuring unit comprises a housing, a circuit substrate including a measuring circuit, said circuit substrate being provided within said housing, said apparatus further comprising a sealing member in a connecting portion between said transmission lines and said measuring unit.

3. The apparatus of claim 1, wherein said measuring circuit comprises a high-frequency generating module for generating a signal applied to said transmission lines; a reflective wave detecting module for detecting a reflective signal in said transmission lines, and for calculating a reflective coefficient by comparing the reflective signal with the signal from said high-frequency generating module and for calculating a depth of said fuel; an amplifier for amplifying the output signal from said reflective wave detecting module; and a connector for transmitting said amplified signal to an instrument panel of said vehicle.

4. The apparatus of claim 1, wherein said measuring circuit comprises a high-frequency generating module for generating a signal applied to said transmission lines; a capacitance voltage detecting module for detecting a capacitance voltage in said transmission lines, and for calculating a depth of said fuel based on said detected capacitance voltage; an amplifier for amplifying the output signal from said capacitance voltage detecting module; and a connector for transmitting said amplified signal to an instrument panel of said vehicle.

5. The apparatus of claim 1, wherein a load resistor is provided at the ends of said transmission lines, said transmission lines being provided within a pipe member made of nonconductor, said pipe member having an open end and being provided with said fuel therein.

6. The apparatus of claim 5, wherein said transmission lines and said load resistor are sealed with a nonconductor.

7. The apparatus of claim 1, wherein said transmission lines are selected from a group of high-frequency transmission lines consisting of a pair of transmission lines, a strip coplanar waveguide, a coplanar strip, and a coaxial cable.

8. A method for measuring fuel contained in a fuel tank of a vehicle comprising the steps of:

supplying a high-frequency wave to transmission lines provided within said fuel tank;

measuring an amplitude of a reflective wave or capacitance voltage in said transmission lines wherein said amplitude varies in accordance with a depth of said fuel.

9. The method of claim 8, further comprising the steps of:

detecting said reflective wave or capacitance voltage;

amplifying said reflective wave or capacitance voltage; and

transmitting said amplified reflective wave or capacitance voltage to an instrument panel of said vehicle.